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**Joint Polar Satellite System (JPSS) Ground Project**
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# Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirement Specification (SRS) for the Land Surface Temperature


National Aeronautics and
Space Administration

**Goddard Space Flight Center**
**Greenbelt, Maryland**

# Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirement Specification (SRS) for the Land Surface Temperature JPSS Review/Approval Page

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**Goddard Space Flight Center**
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# Preface

This document is under JPSS Ground Project configuration control. Once this document is approved, JPSS approved changes are handled in accordance with Class I and Class II change control requirements as described in the JPSS Configuration Management Procedures, and changes to this document shall be made by complete revision.

Any questions should be addressed to:

JPSS Configuration Management Office
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# Change History Log

| Revision | Effective Date | Description of Changes (Reference the CCR & CCB/ERB Approve Date) |
|---|---|---|
| Rev - | August 15, 2013 | This version incorporates 474-CCR-13-1125 which was approved by the JPSS Ground ERB on the effective date shown. |
| Rev A | Jan 16, 2014 | This version incorporates 474-CCR-13-1445 which was approved by JPSS Ground ERB on the effective date shown. |
| Rev A1 | Oct 23, 2014 | This version incorporates 474-CCR-14-2091 which was approved by the JPSS Ground ERB for CO10 on the effective date shown. |
| Rev B | Nov 18, 2014 | This version incorporates 474-CCR-14-1721, 474-CCR-14-1741, 474-CCR-14-1781, 474-CCR-14-1793, 474-CCR-14-2110 and 474-CCR-14-2119 which was approved by JPSS Ground ERB on the effective date shown. |

## List of TBx Items

| TBx | Type | ID | Text | Action |
|---|---|---|---|---|
| None | | | | |

# Table of Contents

## List of Figures



## List of Tables

# 1 Introduction

The Joint Polar Satellite System (JPSS) is the National Oceanic and Atmospheric Administration's (NOAA) next-generation operational Earth observation program that acquires and distributes global environmental data primarily from multiple polar-orbiting satellites. The program plays a critical role in NOAA's mission to understand and predict changes in weather, climate, oceans and coasts, and the space environment, which support the Nation's economy and protect lives and property. JPSS polar-orbiting satellites provide continued environmental observation that is currently performed by NOAA Polar Operational Environment Satellites (POES). The first JPSS satellite mission, the Suomi National Polar-orbiting Partnership (S-NPP) satellite, was successfully launched in October 2011. It will be followed by two JPSS satellites: JPSS-1, planned for launch in fiscal year (FY) 2017, with JPSS-2 to follow in FY2022.

In addition to the JPSS Program's own satellites operating in the 1330 Local Time of the Ascending Node (LTAN) orbit, NOAA also leverages mission partner assets for better global coverage. These partner assets include the Department of Defense (DoD) operational weather satellites (in the 1730 – 1930 LTAN orbit), European Organisation for the Exploitation of Meteorological Satellites (EUMETSAT) Meteorological Operational (Metop) satellites (in the 2130 LTAN orbit) and Japanese Aerospace Exploration Agency (JAXA) Global Change Observation Mission-Water (GCOM-W) satellites (in the 1330 LTAN orbit). JPSS routes Metop data from the McMurdo Station, Antarctica to the EUMETSAT facility in Darmstadt, Germany and EUMETSAT provides Metop data to NOAA. For GCOM, JPSS routes the GCOM-W data from Svalbard, Norway through the NOAA Satellite Operations Facility (NSOF) in Suitland, MD to the JAXA facility in Japan. The JPSS program also processes GCOM-W data and delivers GCOM-W products to the JPSS users who have JAXA permissions.

The JPSS Program provides data acquisition and routing support to the Defense Meteorological Satellite Program (DMSP) and the Coriolis Program. The JPSS Program provides data routing support to the National Science Foundation (NSF), as well as the National Aeronautics and Space Administration (NASA) Space Communication and Navigation (SCaN)-supported missions, which include the Earth Observing System (EOS). As part of the agreements for the use of McMurdo Station, JPSS will provide communications/network services for the NSF between McMurdo Station, Antarctica and Centennial, Colorado.

As a multi-mission ground infrastructure, the JPSS Ground System supports the heterogeneous constellation of the before-mentioned polar-orbiting satellites both within and outside the JPSS Program through a comprehensive set of services as listed in Table 1-1.

**Table: 1-1 JPSS Ground System Services**

| Service | Description |
|---|---|
| Enterprise Management and Ground Operations | Provides mission management, mission operations, ground operations, contingency management and system sustainment |
| Flight Operations | Provides launch support and early orbit operations, telemetry and commanding, orbital operations, mission data playback, payload support, flight software upgrade, flight vehicle simulation, and disposal at the end of mission life |
| Data Acquisition | Provides space/ground communications for acquiring mission data |
| Data Routing | Provides routing of telemetry, mission and/or operations data through JPSS' global data network |
| Data Product Generation | Provides the processing of mission data to generate and distribute raw, sensor, environmental, and ancillary data products |
| Data Product Calibration and Validation | Provides calibration and validation of the data products |
| Field Terminal Support | Provides development and operational support to the Field Terminal customers |

## 1.1 Identification

This SRS provides requirements for the Land Surface Temperature (LST) Environmental Data Record (EDR). LST play an important role in land-surface processes on a regional as well as on a global scale. They are of fundamental importance to the net radiation budget at the Earth's surface and to monitoring the state of crops. LST is a good indicator of both the greenhouse effect and the energy flux between the atmosphere and the ground. Satellite-derived LST assimilates to climate, mesoscale and land surface models to estimate the sensible heat flux and latent heat flux from the Earth's surface. Satellite based LST measurement has not been used operationally in regional weather forecasting and climate prediction due to large uncertainties. However they have the potential to provide LST information over vast remote regions such as deserts.

The accuracy of satellite LST measurement is primarily limited by the complexity of land surface types, the atmospheric correction, and sensor performance. The published satellite multichannel LST algorithm permits global LST retrievals within 3 to 4 K measurement accuracy.

The overall scientific objective of the VIIRS LST retrieval is to provide improved measurements of global and regional LST fields. The VIIRS LST EDR requires a 1.4 K measurement accuracy and 2.5 K measurement precision. The requirement of measurement precision is difficult to meet because of the large variations of LST in both space and time, and most importantly the variation in emissivity within each land type. LSTs can vary by 10 K in just a few meters and by 50 K over the daily cycle

## 1.2 Algorithm Overview

The VIIRS cloud cover, snow/ice, and land/ocean masks are used to eliminate cloud contaminated, ice-covered, and ocean pixels. Land cover type is retrieved from visible and near-IR bands by the VIIRS Land software module. The LST is retrieved using a regression equation, with separate coefficients for each land cover type. For the VIIRS baseline split window algorithm, only knowledge of the land type is needed and no emissivity information is required.

## 1.3 Document Overview

| Section | Description |
|---|---|
| Section 1 | Introduction – Provides a brief overview of the JPSS Ground System and the relevant algorithm, as reference material only. |
| Section 2 | Related Documentation – Lists related documents and identifies them as Parent, Applicable, or Information Documents such as, MOAs, MOUs, technical implementation agreements, as well as Data Format specifications. This section also establishes an order of precedence in the event of conflict between two or more documents. |
| Section 3 | Algorithm Requirements – Provides a summary of the science requirements for the products covered by this volume. |
| Appendix A | Requirements Attributes – Provides the mapping of requirements to verification methodology and attributes. |

# 2 Related Documentation

The latest JPSS documents can be obtained from URL: https://jpssmis.gsfc.nasa.gov/frontmenu_dsp.cfm. JPSS Project documents have a document number starting with 470, 472 or 474 indicating the governing Configuration Control Board (CCB) (Program, Flight, or Ground) that has the control authority of the document.

## 2.1 Parent Documents

The following reference document(s) is (are) the Parent Document(s) from which this document has been derived. Any modification to a Parent Document will be reviewed to identify the impact upon this document. In the event of a conflict between a Parent Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

| Doc. No. | Document Title |
|---|---|
| 470-00067 | Joint Polar Satellite System (JPSS) Ground System Requirements Document (GSRD) |
| 470-00067-02 | Joint Polar Satellite System (JPSS) Ground System Requirements Document (GSRD), Volume 2 - Science Product Specification |
| 474-00448-01-01 | Joint Polar Satellite System (JPSS) Algorithm Specification Volume I: Software Requirements Specification (SRS) for the Common Algorithms |

## 2.2 Applicable Documents

The following document(s) is (are) the Applicable Document(s) from which this document has been derived. Any modification to an Applicable Document will be reviewed to identify the impact upon this document. In the event of conflict between an Applicable Document and the content of this document, the JPSS Program Configuration Change Board has the final authority for conflict resolution.

| Doc. No. | Document Title |
|---|---|
| 474-00051 | Joint Polar Satellite System (JPSS) VIIRS Land Surface Temperature Algorithm Theoretical Basis Document (ATBD) |
| 474-00448-02-21 | Joint Polar Satellite System (JPSS) Algorithm Specification Volume II: Data Dictionary for the Land Surface Temperature |
| 474-00448-04-21 | Joint Polar Satellite System (JPSS) Algorithm Specification Volume IV: Software Requirements Specification Parameter File (SRSPF) for the Land Surface Temperature |

## 2.3 Information Documents

The following documents are referenced herein and amplify or clarify the information presented in this document. These documents are not binding on the content of this document.

| Doc. No. | Document Title |
|---|---|
| 474-00333 | Joint Polar Satellite System (JPSS) Ground System (GS) Architecture Description Document (ADD) |
| 474-00054 | Joint Polar Satellite System (JPSS) Ground System (GS) Concept of Operations (ConOps) |

| Doc. No. | Document Title |
|---|---|
| 470-00041 | Joint Polar Satellite System (JPSS) Program Lexicon |
| 474-00448-03-21 | Joint Polar Satellite System (JPSS) Algorithm Specification Volume III: Operational Algorithm Description (OAD) for the Land Surface Temperature |
| 429-05-02-42 | Joint Polar Satellite System (JPSS) Mission Data Format Control Book for NPP |
| 472-00251 | Joint Polar Satellite System (JPSS) Mission Data Format Control Book for JPSS-1 |

# 3 Algorithm Requirements

## 3.1 States and Modes

### 3.1.1 Normal Mode Performance

SRS.01.21_147 The Land Surface Temperature EDR software shall calculate LST with a measurement accuracy of 1.4 K, measured as a bias.

*Rationale:* The measurement accuracy was flowed down from the Level 1 and Level 2 documents. Measurement Accuracy (and Measurement Precision) performance will be verified and validated for an aggregated 4 km horizontal cell to provide for adequate comparability of performance across the scan.

*Mission Effectivity:* JPSS-1, JPSS-2

SRS.01.21_148 The Land Surface Temperature EDR software shall calculate LST with a 1-sigma measurement precision of 2.5 K.

*Rationale:* The measurement precision was flowed down from the Level 1 and Level 2 documents. Measurement Accuracy (and Measurement Precision) performance will be verified and validated for an aggregated 4 km horizontal cell to provide for adequate comparability of performance across the scan.

*Mission Effectivity:* JPSS-1, JPSS-2

SRS.01.21_151 The Land Surface Temperature EDR software shall calculate LST within the observable range of 213 K to 343 K.

*Rationale:* The measurement range was flowed down from the Level 1 and Level 2 documents.

*Mission Effectivity:* JPSS-1, JPSS-2

### 3.1.2 Graceful Degradation Mode Performance

SRS.01.21_255 The Land Surface Temperature EDR software shall use Quarterly Surface Type EDR for fallback processing when the Surface Type EDR input is not available.

*Rationale:* The EDR software through its algorithm must generate products using back up data sources to meet the graceful degradation requirement. These degraded products are not required to meet the algorithm performance requirements.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

SRS.01.21_256 The Land Surface Temperature EDR software shall use NAAPS Aerosol Optical Depth (AOD) current forecast for fallback processing when the AOT IP input is not available.

*Rationale:* The EDR software through its algorithm must generate products using back up data sources to meet the graceful degradation requirement. These degraded products are not required to meet the algorithm performance requirements.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

SRS.01.21_258 The Land Surface Temperature EDR software shall use NAAPS Aerosol Optical Depth (AOD) extended forecast for fallback processing when the AOT IP input and the NAAPS Aerosol Optical Depth (AOD) current forecast are not available.

*Rationale:* The EDR software through its algorithm must generate products using back up data sources to meet the graceful degradation requirement. These degraded products are not required to meet the algorithm performance requirements.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

SRS.01.21_257 The Land Surface Temperature EDR software shall use Global Aerosol Climatology Project (GACP) AOD climatology for fallback processing when both the AOT IP and NAAPS AOD current and extended forecast inputs are not available.

*Rationale:* The EDR software through its algorithm must generate products using back up data sources to meet the graceful degradation requirement. These degraded products are not required to meet the algorithm performance requirements.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

## 3.2 Algorithm Functional Requirements

### 3.2.1 Product Production Requirements

Not applicable.

### 3.2.2 Algorithm Science Requirements

SRS.01.21_140 The Land Surface Temperature EDR software shall incorporate a computing algorithm provided for land surface temperature.

*Rationale:* The EDR software through its computing algorithm must compute the land surface temperature In accordance with the JPSS VIIRS Land Surface Temperature ATBD (474-00051).

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

### 3.2.3 Algorithm Exception Handling

SRS.01.21_141 The Land Surface Temperature EDR software shall set each <FillField> to <FillValue> according to <FillCondition> specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Land Surface Temperature (474-00448-04-21) <LandSurfaceTemp_EDR><fill>.

*Rationale:* The EDR software through its computing algorithm must fill the LST EDR values based on the established fill conditions to satisfy exclusion and fill conditions.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

## 3.3 External Interfaces

### 3.3.1 Inputs

SRS.01.21_144 The Land Surface Temperature EDR software shall incorporate inputs specified in Table 3.1.

*Rationale:* The EDR software must be able to receive and process the resource interaction items shown in Table 3-1 in order to produce the intended Land Surface Temperature EDR products.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

SRS.01.21_259 The Land Surface Temperature EDR software shall ingest tables and coefficients formatted in accordance with Section 7 of the JPSS Algorithm Specification Vol II: Data Dictionary for Land Surface Temperature (474-00448-02-21).

*Rationale:* This defines the formats for Lookup Tables, and Processing Coefficients for input into the algorithm module.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

Table 3-1 and Figure 3-1 are best viewed together since they describe the processes governed by this SRS in different ways. The figure diagrams the data flowing into, out of, and within the code governed by this SRS. The table lists these same data interactions as well as all downstream dependencies for outputs from this SRS.

Each row in the table describes a single software interaction – data flowing from one software item to another. The data is listed in the first column. The second column includes the mnemonic or short name for the data. Blanks indicate there is no mnemonic. The third and fourth columns contain the SRS that generates the data product(s) in the first column, and the SRS that receives those products. The final two columns contain the actual function name in Algorithm Development Library (ADL) that produces those products, and the function that inputs those products. The SRS's titled "Ingest MSD" and "Store/Retrieve" are non-existent SRS's functioning as data handling for the IDPS. The software functions "Store Products" and "Retrieve Products" are similar non-existent functions that operate as IDPS data handling.

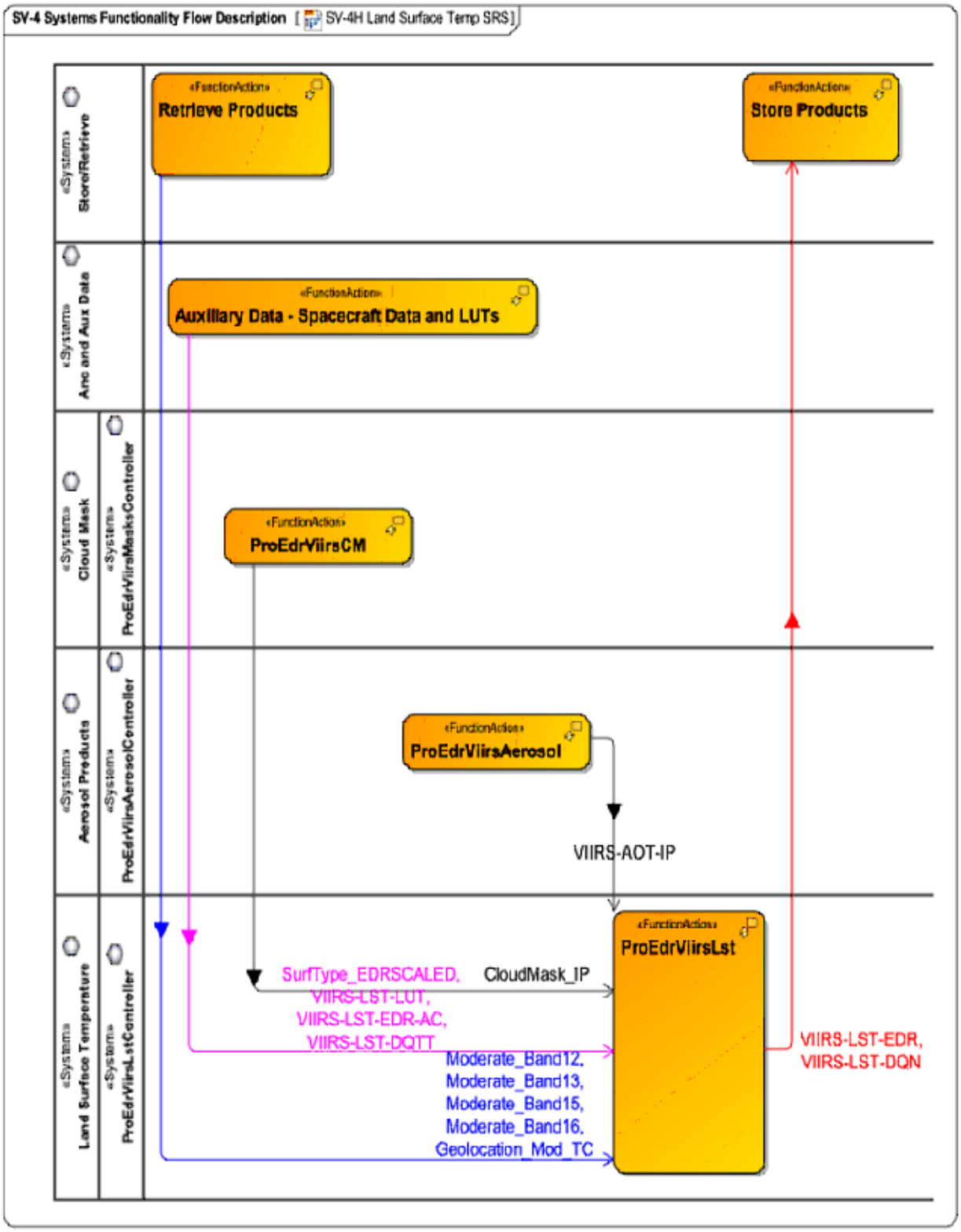


**Figure: 3-1 Land Surface Temperature Data Flows**

**Table: 3-1 Systems Resource Flow Matrix: Land Surface Temperature**

| Data Product Name | Mnemonic or Short Name, if applicable | Source SRS | Receiving SRS | Sending Function | Receiving Function |
|---|---|---|---|---|---|
| Moderate_Band12<br>Moderate_Band13<br>Moderate_Band15<br>Moderate_Band16<br>Geolocation_Mod_TC | SDRE-VM12-C0030<br>SDRE-VM13-C0030<br>SDRE-VM15-C0030<br>SDRE-VM16-C0030<br>VIIRS-MOD-RGEO-TC | Store/Retrieve | Land Surface Temperature | Retrieve Products | ProEdrViirsLst |
| SurfType_EDRSCALED<br>VIIRS-LST-LUT<br>VIIRS-LST-EDR-AC<br>VIIRS-LST-DQTT | NP_NU-LM0233-012<br><br>DP_NU-LM2030-000 | Anc and Aux Data | Land Surface Temperature | Auxiliary Data - Spacecraft Data and LUTs | ProEdrViirsLst |
| VIIRS-AOT-IP | IMPE_VAOT_R0100 | Aerosols | Land Surface Temperature | ProEdrViirsAerosol | ProEdrViirsLst |
| CloudMask_IP | IMPE_CMIP_C0030 | Cloud Mask | Land Surface Temperature | ProEdrViirsCM | ProEdrViirsLst |
| VIIRS-LST-EDR<br>VIIRS-LST-DQN | EDRE-VLST-C0030<br>DP_NU-L00090-001 | Land Surface Temperature | Store/Retrieve | ProEdrViirsLst | Store Products |

### 3.3.2 Outputs

SRS.01.21_142 The Land Surface Temperature EDR software shall generate the Land Surface Temperature product in conformance with the XML format file in Attachment A.1 of the JPSS Algorithm Specification Vol II: Data Dictionary for the Land Surface Temperature (474-00448-02-21).

*Rationale:* The product profile must conform to the XML format file.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

SRS.01.21_143 The Land Surface Temperature EDR software shall use the terrain-corrected geolocation for the VIIRS M-band.

*Rationale:* The EDR product must be associated with the terrain-corrected geolocation to meet the accuracy requirement.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

## 3.4 Science Standards

Not applicable.

## 3.5 Metadata Output

Not applicable.

## 3.6 Quality Flag Content Requirements

SRS.01.21_152 The Land Surface Temperature EDR software shall report for each <FlagScope> quality flags using <FlagLogic> as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Land Surface Temperature (474-00448-04-21) <LandSurfaceTemp_EDR><QF>.

*Rationale:* Quality Flags must be generated based on the established flag conditions, logic, and format.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

## 3.7 Data Quality Notification Requirements

SRS.01.21_145 The Land Surface Temperature EDR software shall send data quality notifications to the operator according to logic specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Land Surface Temperature (474-00448-04-21) <LandSurfaceTemp_EDR> <Notifications>.

*Rationale:* Notifications must be generated and sent based on the established logic and conditions.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

### 3.8 Adaptation

Not applicable.

### 3.9 Provenance Requirements

Not applicable.

### 3.10 Computer Software Requirements

Not applicable.

### 3.11 Software Quality Characteristics

Not applicable.

### 3.12 Design and Implementation Constraints

SRS.01.21_194 The JPSS Common Ground System shall execute the land surface temperature EDR algorithm.

*Rationale:* The CGS must incorporate algorithm changes that are supplied by the algorithm vendor.

*Mission Effectivity:* S-NPP, JPSS-1, JPSS-2

### 3.13 Personnel Related Requirements

Not applicable.

### 3.14 Training Requirements

Not applicable.

### 3.15 Logistics Related requirements

Not applicable.

### 3.16 Other Requirements

Not applicable.

### 3.17 Packaging Requirements

Not applicable.

### 3.18 Precedence and Criticality

Not applicable.

## Appendix A. Requirements Attributes

The Requirements Attributes Table lists each requirement with CM-controlled attributes including requirement type, mission effectivity, requirement allocation(s), block start and end, method(s) for verifying each requirement, verification events, etc.

| Req ID | CCR History | Requirement Text | Level 3 Type | Product Type | Mission Effectivity | Allocated To | Block Start | Block End | Block 2.0.0 VM | Block 2.1.0 VM | Verification Event |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SRS.01.21_147 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall calculate LST with a measurement accuracy of 1.4 K, measured as a bias. | P | EDR | JPSS-1 JPSS-2 | algorithm provider | 2.0.0 | 3.0.0 | Test | NA | Maturity Level Declaration |
| SRS.01.21_148 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall calculate LST with a 1-sigma measurement precision of 2.5 K. | P | EDR | JPSS-1 JPSS-2 | algorithm provider | 2.0.0 | 3.0.0 | Test | NA | Maturity Level Declaration |
| SRS.01.21_151 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall calculate LST within the observable range of 213 K to 343 K. | P | EDR | JPSS-1 JPSS-2 | algorithm provider | 2.0.0 | 3.0.0 | Test | NA | Maturity Level Declaration |
| SRS.01.21_255 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall use Quarterly Surface Type EDR for fallback processing when the Surface Type EDR input is not available. | G | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_256 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall use NAAPS Aerosol Optical Depth (AOD) current forecast for fallback processing when the AOT IP input is not available. | G | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_258 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall use NAAPS Aerosol Optical Depth (AOD) extended forecast for fallback processing when the AOT IP input and the NAAPS Aerosol Optical Depth (AOD) current forecast are not available. | G | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_257 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall use Global Aerosol Climatology Project (GACP) AOD climatology for | G | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |

| Req ID | CCR History | Requirement Text | Level 3 Type | Product Type | Mission Effectivity | Allocated To | Block Start | Block End | Block 2.0.0 VM | Block 2.1.0 VM | Verification Event |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | fallback processing when both the AOT IP and NAAPS AOD current and extended forecast inputs are not available. | | | | | | | | | |
| SRS.01.21_140 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall incorporate a computing algorithm provided for land surface temperature. | Ap | EDR | S-NPP JPSS-1 JPSS-2 | algorithm provider | 2.0.0 | 3.0.0 | Inspection | NA | Maturity Level Declaration |
| SRS.01.21_141 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall set each <FillField> to <FillValue> according to <FillCondition> specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Land Surface Temperature (474-00448-04-21) <LandSurfaceTemp_EDR><fill>. | E | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_144 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall incorporate inputs specified in Table 3.1. | I | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_259 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall ingest tables and coefficients formatted in accordance with Section 7 of the JPSS Algorithm Specification Vol II: Data Dictionary for Land Surface Temperature (474-00448-02-21). | Ft | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_142 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall generate the Land Surface Temperature product in conformance with the XML format file in Attachment A.1 of the JPSS Algorithm Specification Vol II: Data Dictionary for the Land Surface Temperature (474-00448-02-21). | F | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_143 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall use the terrain-corrected geolocation for | Fg | GEO | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |

| Req ID | CCR History | Requirement Text | Level 3 Type | Product Type | Mission Effectivity | Allocated To | Block Start | Block End | Block 2.0.0 VM | Block 2.1.0 VM | Verification Event |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | | the VIIRS M-band. | | | | | | | | | |
| SRS.01.21_152 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall report for each <FlagScope> quality flags using <FlagLogic> as specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Land Surface Temperature (474-00448-04-21) <LandSurfaceTemp_EDR><QF>. | Q | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_145 | 474-CCR-14-2119 | The Land Surface Temperature EDR software shall send data quality notifications to the operator according to logic specified in the JPSS Algorithm Specification Vol IV: SRSPF for the Land Surface Temperature (474-00448-04-21) <LandSurfaceTemp_EDR> <Notifications>. | N | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |
| SRS.01.21_194 | 474-CCR-14-2119 | The JPSS Common Ground System shall execute the land surface temperature EDR algorithm. | Ai | EDR | S-NPP JPSS-1 JPSS-2 | CGS | 2.0.0 | 3.0.0 | Inspection | NA | 2.0.0-AAT |